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ABSTRACT

An effective environmental scan will improve the quality of community college planning and decision making by alerting institutional leaders to the challenges and opportunities in the environment. Scanning can be done in three ways: (1) establishing a scanning committee to gather and synthesize information to guide planning; (2) sponsoring a scanning conference involving outside constituencies; and (3) assigning the task to the institutional research and planning office. Regardless of the approach taken, six environmental contexts should all be monitored: demographic trends, economic conditions, legal and political processes, relations with other schools and organizations, sociocultural patterns, and technological changes. Various sources are available for keeping track of these trends. The Bureau of the Census is the primary source for national data; state agencies can often provide a wealth of useful planning information; municipal governments, associations, and private sources can provide information on the local service area; and county data can be obtained from government offices, economic development corporations, and local chambers of commerce. From the many techniques available for preparing scans of these six environmental conditions, the environmental scanner should pick the methods that facilitate dissemination of results to top management for their effective use. (ALB)

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SCANS SOLO:
A One-Person Environmental Scanning Process

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at the first annual conference of the
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SCANS SOLO:
A One-Person Environmental Scanning Process

College and university planners, facing great uncertainty and potential declines in enrollment, are turning to the corporate technique of environmental scanning for help. For many colleges, however, the corporate model is too extensive and time-consuming. This article describes how one person--an institutional researcher or planning analyst--can perform environmental scanning applicable to small commuter colleges and community colleges in particular.

Should Community Colleges Do Environmental Scanning?

Why should an institution invest scarce resources in a formal scanning process? A effective scan will improve the quality of college planning and decisionmaking, by alerting those leading the organization to challenges and opportunities in its environment. Specific uses of environmental-scanning results might include: the assessment phase of strategic planning, unit operational planning, marketing plan development, accreditation self-study reports, fundraising and proposal writing, lobbying, and public relations.

Environmental Scanning and Strategic Planning

Planning without scanning invites trouble. An institution must be aware of changes in its environment if it is to prosper.

To see where scanning fits in the overall planning framework, we can review the steps in what I call a "jargon-free planning process":

Assessment

Where are we now?

What's happening out there?

What are we able to do?

Plan Development

What do we want to accomplish as an institution?

How are we going to do this?

Implementation

Are we doing what we said?

Evaluation

Did we achieve what we wanted?

More formally, the four stages in the strategic planning process can be described as follows. The assessment stage includes a **situation analysis** to describe the institution's current status and position, an **environmental scan** to identify external threats and opportunities, and an **internal appraisal** to identify institutional strengths and weaknesses. Plan development includes the **strategic master plan** to identify strategies and allocate resources to achieve institutional goals reflecting the college's mission and conclusions from strategic assessment, and an **operational plan** to identify unit objectives and action plans

to accomplish collegewide goals. Implementation includes **monitoring** to ensure unit performance of operational action plans. Finally, evaluation includes preparation of an **outcomes report** to measure achievement of institutional goals. This brief summary of the strategic planning process highlights the key role of assessment, of which environmental scanning is an essential element.

Three Ways to Scan

Scanning can be done in three ways. The different approaches, which are not mutually exclusive, are **establishing a scanning committee, sponsoring** or **hosting a scanning conference** or event, and **assigning** the task **to the institutional research and planning office.** The literature commonly discusses the committee approach, with committee members preparing written abstracts of information pertaining to a particular aspect of the environment using a variety of sources, with the abstracts then used to develop strategic implications to guide planning. Morrison (1987) describes the extensive scanning/forecasting systems that can result. This is a costly approach, involving top people--as it must if it is to be most effective. This committee process is most beneficial for an institution that has not recently examined its external environment in a formal way. Sponsoring scanning events involving outside constituencies

informs the external community that the college is carefully considering its future and is interested in giving those outside the college an opportunity to provide input (Nunley, 1987, p.26), but it is also a costly approach. In addition to the logistical and promotional aspects of hosting any event, involvement of top administration can be quite extensive. The third approach to environmental scanning is to assign the task to the institutional research and planning office. This is the easiest approach from an institutional standpoint. However, a commitment to active dissemination of the findings is essential for this approach to be effective. Otherwise, useful information may remain unread and unused. The institutional-research-based approach has been successful at Prince George's Community College, where the director has single-handedly produced a series of environmental scans well integrated into the college's planning framework.

Six Environmental Contexts

Jonsen (1986) identified six environmental contexts institutions should monitor:

> **Demographic:** The decline in high school graduates, reaching its national nadir in the early 1990s, will be accompanied in most areas with increases in older populations. In addition to the shifting age composition, other population trends to be monitored for their institutional implications include changes in

ethnic composition and socioeconomic characteristics.

Economic: Economic conditions may affect not only students' ability to pay (with implications for tuition schedules and financial aid) but interest in attending college. Trends in local, state, and federal governmental revenues may affect institutional funding levels. Changing industrial patterns may alter local occupational demand, with programmatic implications. Changes in tax policy may impact on philanthropic contributions.

Legal-political: Educational institutions inevitably participate in local, state, and federal political processes. Public institutions must be intimately involved in budgetary politics, but private colleges also participate in politics, from financial aid issues to town-and-gown relations. Colleges must be attuned to how changes in other contexts may have political ramifications. For example, population migration patterns affecting Prince George's County, Maryland, resulted in the minority enrollment at the community college growing from less than 10 percent to nearly 50 percent in 15 years. During this period, very little faculty turnover took place, with the result that a predominately white faculty and staff are serving an

increasingly minority student population. A few local politicians raised the college's employment practices as an issue, introducing legislative threats to withhold $1.2 million in college funding subject to a state senate subcommittee's review of the college's affirmative action efforts. While discussions with the college satisfied the legislators, and the restrictive funding amendments were dropped, this episode illustrates how colleges must be continuously sensitive to prevailing political currents.

Organizational-competitive: In addition to governmental and political actors, colleges and universities interact with many other organizations. The quality of institutional relationships with other higher education institutions, secondary schools, business and industry groups, professional associations, accrediting agencies, and other organizations can directly affect achievement of college goals. Scanning in this context must also include assessment of the competition, not just other colleges but public schools' adult education offerings and corporate training programs.

Socio-cultural: Changing cultural attitudes and behavior have programmatic and marketing implications

for colleges. Dual income families, increased female workforce participation, multiple career changes, and, in general, more heterogeneous lifestyles, have colleges adjusting schedules, providing child care, and developing innovative delivery modes.

Technological: Changing technology affects both what colleges teach and how they teach it. New programs in information systems, robotics, and the like are the obvious manifestations, but equally important are the new ways instruction is being delivered. Interactive videodiscs, cable and satellite communication, and other information technologies may portend new roles for faculty and new relationships with students. Office automation (particularly microcomputers) has altered the manner in which even the most routine campus tasks are performed.

Identifying these six contexts for environmental scanning encourages a comprehensive approach sensitive to the diversity and turbulence of factors affecting community colleges today (Jonsen, p. 15). The solo scanner must include all of them in his or her efforts; an incomplete scan can mislead an institution into a false sense of security. Most community colleges track demographic and economic trends, but many pay

insufficient attention to the legal-political and organizational environments.

Environmental Scanning Source Materials

Sources of information for keeping on top of environmental trends are numerous and varied. In this section, several useful sources will be identified, starting with global and national trends and getting successively more localized. Specific examples from Maryland and Prince George's County will be cited for concreteness; in most cases, analogues can be found in other states and localities.

National sources. The fundamental source is the Bureau of the Census of the Department of Commerce. To keep up with Census information, subscribe to its Monthly Product Announcement and Data User News. Also obtain their telephone contact list of staff specialists; I have found them extremely professional and helpful. Also available is CENDATA, the Bureau's on-line data service. Other good sources of national data are American Demographics magazine and the United Way of America, whose strategic planning division produces valuable reports such as What Lies Ahead: Looking Toward the '90s. National sources with a focus on education include The Chronicle of Higher Education, the American Council on Education's Cooperative Institutional Research Program, and Harold Hodgkinson's All One

System: Demographics of Education--Kindergarten Through Graduate School (1985).

State sources. Official state agencies can provide a wealth of useful planning information. Maryland's Department of State Planning, for example, makes census and other data available on diskettes as well as analyzed in reports. They publish a data center newsletter with both analysis and product announcements. In addition to periodic population projections by age, race, and gender, Department of State Planning publications of particular usefulness include Public School Enrollment Projections and Jurisdiction Migration Flow Trends. The latter publication was especially useful in explaining enrollment growth during a period when overall county population did not change. Another source of population data is the state Center for Health Statistics. On a different plane, the Maryland Chamber of Commerce publication Business Issues for 1988 identified over 50 issues of "utmost concern" to the Maryland business community. In one convenient source, the environmental scanner gains a perspective on what's important to area businesses. While not a substitute for personal interaction with industry leaders, such publications can be good background material to sensitize college planners to the positions of a major constituency. For solo scanners, such shortcuts are invaluable.

Metropolitan area sources. For community colleges, information on the local service area is especially useful. Colleges in or near major metropolitan areas can benefit from many municipal, association, and private sources. City agencies often provide data similar to that available from state governments, but for a more focussed geographic area. Local governments sometimes cooperate in planning endeavors that produce valuable data for college scanners. For example, the Metropolitan Washington Council of Governments produces cooperative population and economic forecasts and issues a regional newsletter. Professional business organizations, such as the Washington/Baltimore Regional Association, are a good source of industrial and economic information. Some local chapters of the United Way prepare planning reports of high quality. The United Way of Central Maryland, for example, has produced an environmental scanning report entitled Central Maryland Megatrends: Opportunities For Action (1988) available in a 37-page booklet or a slide program with tape narration. Large cities may have private research firms that produce reports available to the public. Local research firms in Washington, for example, have issued reports from changing lifestyles to financial projections for local jurisdictions. Finally, larger cities often have their own magazines (The Washingtonian) and business periodicals (Regardies) as well as major newspapers, all of which provide a continuous source of relevant scanning information.

County sources. Commuter schools, especially community colleges with lower district tuition and thus concentrated service areas, can benefit from many sources of county data. County government planning offices, economic development corporations, and local chambers of commerce are all sources of county data and forecasts. Scanners also need to be alert for one-time events and commissions that can produce valuable information. For example, the county executive and local business leaders in Prince George's County, Maryland, initiated a Strategic Planning Group for the county in 1983 that produced A Strategic Plan for Prince George's County (1986), a 45-page report with analysis and strategies for issues in education, public safety, employment, and public service financial stability.

The above sources, from scanning efforts in Maryland, are meant to be suggestive of what may be available in other areas. By locating and using existing trend reports and forecasts, a meaningful environmental scan can be done by a single energetic researcher.

Population Analysis

Many techniques are available for preparing scans of the six environmental contexts identified above. Two ways of presenting population information will be discussed here as illustrations of how to effectively communicate data that can be very detailed and cumbersome in source documents.

Displaying Changing Age Composition. Population forecasts are basic planning data. Detailed projections by demographic subgroups over several years are commonly available and contain useful information--but how can the scanner get the message across to busy decisionmakers? Columns of numbers won't do it. Microcomputer business graphics software enables the solo scanner to easily prepare data displays with impact. Figures 1 and 2 show selected changes in age composition facing Prince George's Community College in Largo, Maryland. The pie charts on the left show what proportion of the college's credit and noncredit enrollment comes from the age cohort analyzed. The area graph on the right shows projected changes in the number of county residents in the age cohort. Juxtaposition of the two clearly illustrates how the college will be facing a different population by the year 2000. (The full presentation included similar displays for five groups covering the entire age spectrum.) Credit program administrators familiar with the expected decline in high school graduates had not realized how the decline also included people in their twenties. Noncredit administrators, used to serving adults beginning their careers and senior citizens, immediately began planning how to reach the expanding group in their forties and fifties. A simple graph got through where comprehensive planning reports had not.

[INSERT FIGURES 1 AND 2 HERE]

AGE 20 - 29

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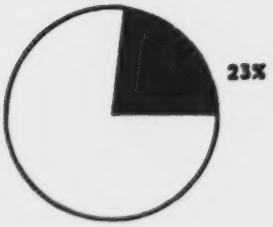

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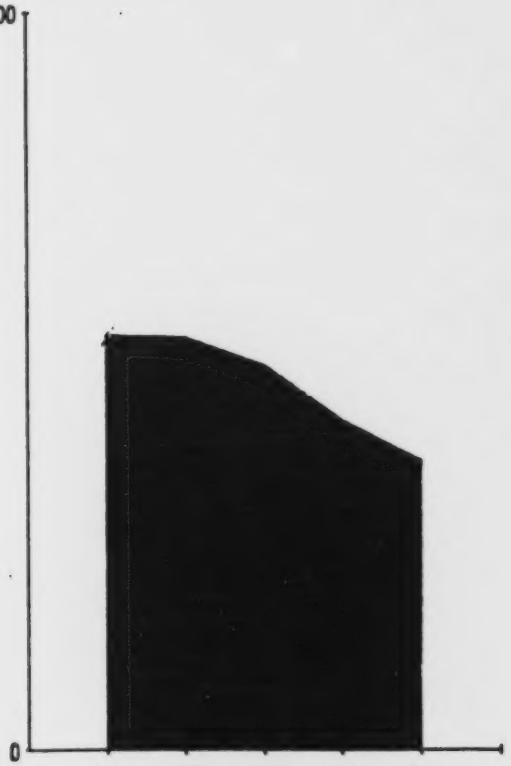
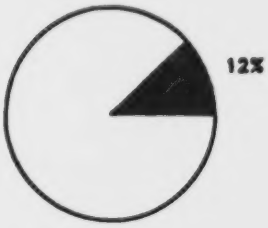
Figure 1



PRINCE GEORGE'S COUNTY POPULATION

AGE 40 - 59



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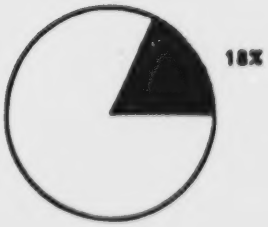

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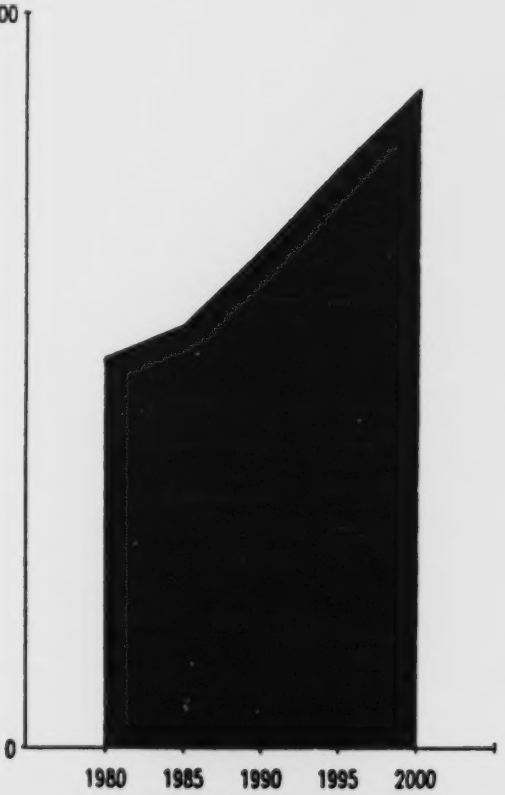
Figure 2



PRINCE GEORGE'S COUNTY POPULATION

Geographic Population Analysis through Mapping. The availability of microcomputer mapping software has made possible the effective communication and geographic analysis of demographic data at a cost within the budget of many community colleges. For less than $1,000, a planning office can have at its disposal a powerful software package and associated cartographic boundary files enabling the display of user-selected data for geographic areas such as census tracts and zip codes. Census and other data are readily available on diskettes, both commercially and from some government agencies, and each college can create and display its own data on maps of its own design. For example, a school might map its enrollment yield rates by zip code to help target marketing efforts. Mapping can suggest transportation needs or even locations for extension operations.

Any data available for distinct geographic areas can be mapped. Mapping captures geographic relationships that spreadsheets and pie charts miss. Most maps use different hatching or colors to indicate the data range values for a given geographic area (e.g., county, census tract). Figure 3 is an example displaying poverty data for minor civil divisions in Prince George's County, Maryland. Change over time could be shown by mapping the net change (from 1970 to 1980 if census data, instead of the 1980 data ranges). To display areal distributions of variables that can meaningfully have a density, or occurrences per geographic area, a dot-density map is ideal. Figure 4 is a dot-density map showing the geographic distribution

and density of high school graduates in the county who have not attended college. Using a plotter, maps can be produced for print copies as shown here or as color transparencies for presentation use.

[INSERT FIGURES 3 AND 4 HERE]

Dissemination of Environmental Scanning Findings

The most thorough environmental scan is of little value if decisionmakers are not made aware of its findings. Effective dissemination of scanning results is a key part of the process. This is especially important for the institutional-research-based approach, since the involvement of top people assumed in the committee and conference approaches is largely absent.

Dissemination for a college completing its first major scan might follow the following pattern. The first step would involve a formal briefing presented to the college's planning council, president's cabinet, or equivalent top administrative group. This provides for important feedback to the scanner, and may initiate additional work before any further dissemination. Once top management is satisfied with the scanning results, a series of formal presentations to college constituency groups is recommended. These would include, first, the governing board of trustees or regents, and then the faculty senate and classified

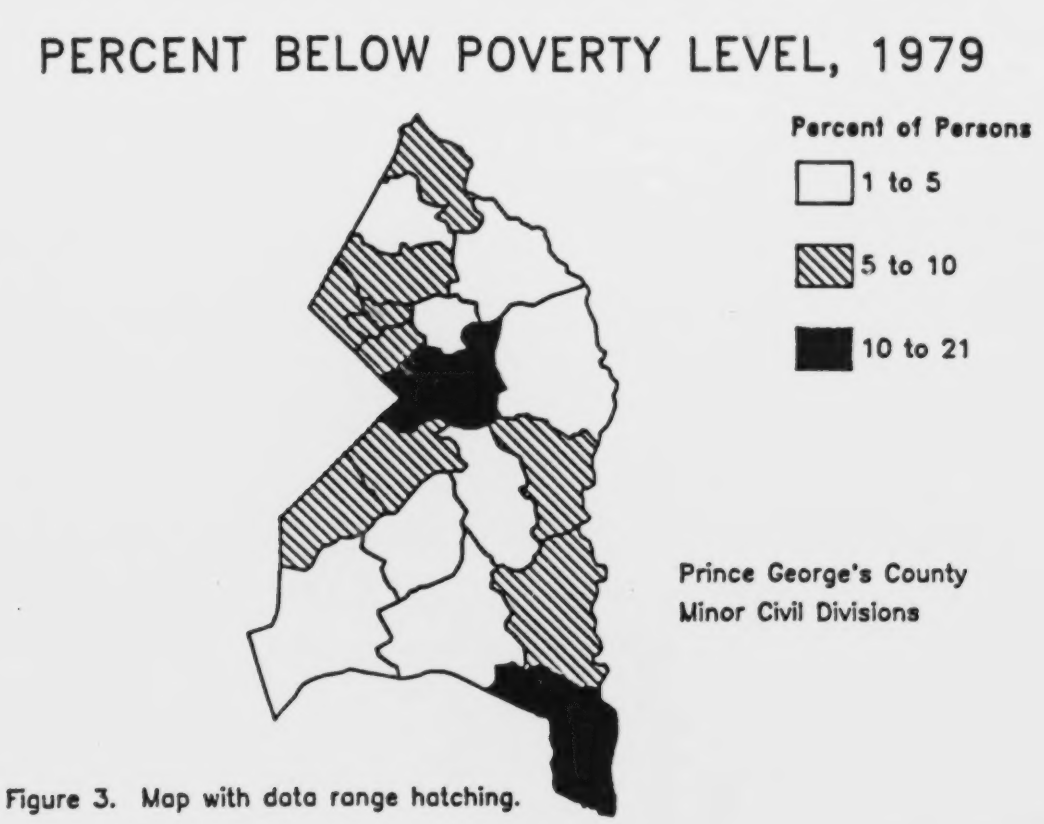


Figure 3. Map with data range hatching.

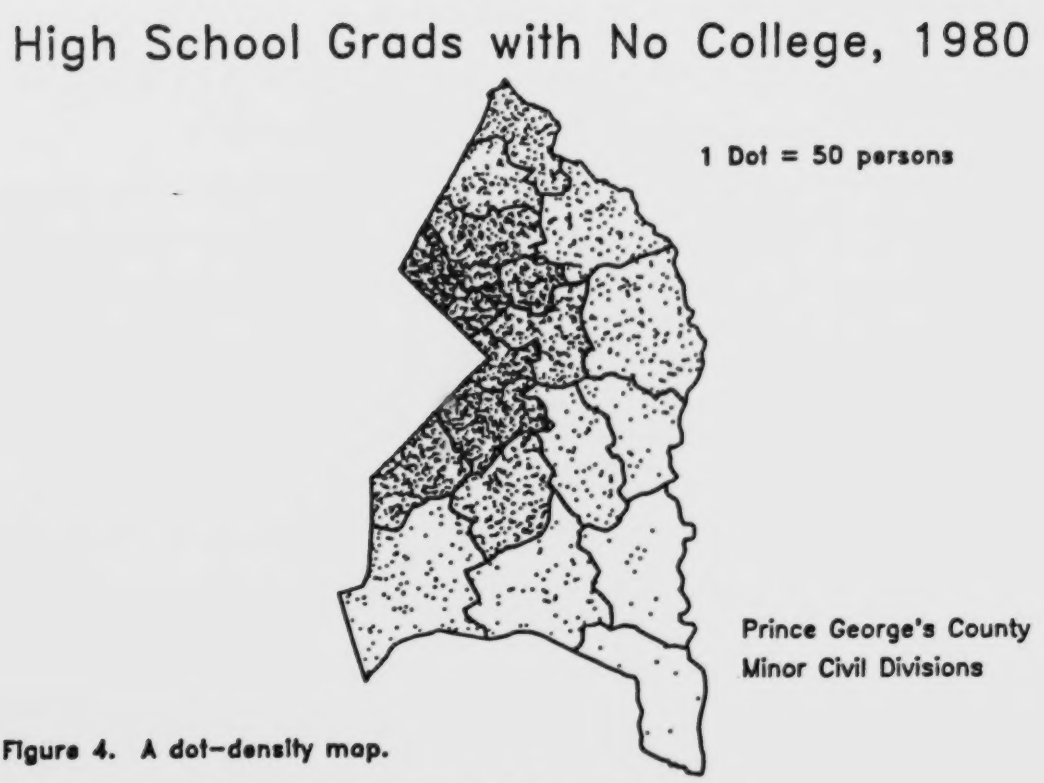


Figure 4. A dot-density map.

staff organization. A series of written reports with the detailed data supporting the major briefing findings should be distributed to the administrative staff, and available to others on request. If the college publishes a Master Plan or similar document, environmental scanning findings make an ideal chapter preceding the strategic plan itself. Finally, a two-or-three page memo summarizing the scanning highlights should be circulated among all employees of the college. Figure 5 shows the scanning highlights shared with the staff of Prince George's Community College in December, 1987. Note that each set of implications associated with a specific trend or forecast ends with a question mark, suggesting that the reader should think about what the forecast might mean for his or her office or function at the college.

[INSERT FIGURE 5 HERE]

Effective dissemination requires that the scanner think in terms of simple communication. While the scanning process may involve sifting through thousands of pages of material and hundreds of hours of interviews and conversations, the final message that gets though will necessarily be brief. Graphics can often communicate data effectively, as suggested above with the population graphs. Sometimes a slogan can help. To make the point that even if the enrollment decline among recent high school graduates is offset by an equal number of older students

Figure 5

PRINCE GEORGE'S COMMUNITY COLLEGE
Office of Institutional Research and Analysis

ENVIRONMENTAL SCANNING HIGHLIGHTS
December 1987

TREND OR FORECAST	IMPLICATIONS
1. **Changing county age distribution, with fewer high school graduates and more older adults.** H.S. Grads: 1988: 7,800 1990: 7,100 1992: 6,000	1. Decrease in traditional source of full-time students. 2. Busy, part-time adult students balancing work, family, and other commitments; may have implications for class scheduling, etc. 3. More demand for enrichment courses. 4. ?
2. **Changing racial composition, with an increasing proportion minority.**	1. Blacks less likely to enroll in college, could mean fewer entering students. 2. As a group, black students have had lower retention rate; student careers of shorter duration imply lower enrollment levels. 3. ?
3. **Continued high female workforce participation.** Nearly two-thirds of the women in the metro area are employed outside the home, with some gaining professional, managerial positions. Continued increase in households headed by single women. Over a third of county households with incomes below the poverty line headed by black females.	1. A majority of college students will continue to be female. 2. Organizations will have to adapt to family needs of working parents (schedules of both students and employees, provision of child care).

4. **Little or no improvement in capabilities of entering students.** Average combined SAT scores: Maryland 914 black students 742 white students 958 Prince George's 826 Over half of the H.S. students in the CGP testing program need remedial coursework in at least one area. SAT scores, increasing in most area jurisdictions, continue to decline each year in Prince George's.	1. Testing and placement remain crucial for promoting student success. 2. Course prerequisites enforcement important: "By allowing quasi-literate students into regular college-level courses, community colleges often have forced faculty to compromise standards." (John Roueche) 3. Remedial education essential for expanding population. 4. Student support services, faculty advising, and targeted retention programs may help at-risk groups. 5. ?
5. **Most students will be employed outside the home.** At PGCC, 58% work full-time 28% work part-time (1/4 of full-time students were also working full-time)	1. Advisement should include realistic expectations; limited courseloads for those with heavy employment demands? 2. Schedule more one-night a week classes; fewer meetings per week in summer sessions? 3. ?
6. **Intense competition for students.** Older students, once the community colleges' by default, increasingly courted by four-year colleges and proprietary schools. Military is attractive option for younger population. Corporate education growing.	1. Expand marketing effort with targeted appeals to inform service population of PGCC offerings. 2. More articulation agreements (program-specific).

7. **Prosperous local economy with considerable growth potential. Private sector information processing, electronics, and other R&D firms most visible additions to the largely white-collar and services-oriented local economy. Large county employers include Goddard SFC, University of Maryland, Giant Food, U.S. Bureau of the Census, Beltsville Agricultural Research Center, Litton's Amecon Division, and Digital Equipment Corporation. Smaller firms are predominant:** **Excluding self-employed persons, over two-thirds of all county business locations have less than ten employees. Only 23 firms in the county have 500 or more employees.**	1. Continuing clientele for specialized, contract training. 2. Credit and noncredit courses and programs developed/evaluated to provide effective contribution to county workforce improvement. (General education outcomes as well as technical training.) 3. Sponsor and/or host business and community organization events on campus. 4. Expand cooperative education and student internship programs. 5. ?
8. **Increased demand for institutional accountability. Accrediting agencies, state officials, and the public will expect colleges to document student achievement.**	1. Compile and reformat existing evaluation information. 2. Create additional assessment tools? 3. ?
9. **Political pressure to increase minority employment at the college.**	1. Monitor implementation and results of the college's affirmative action plan. 2. Establish minority affairs office? 3. ?

entering the college, FTEs would still decline substantially, I coined the phrase "it takes two 35-year-olds to equal one 18-year-old." (The average credit load of the older students was half that of the younger students.) The line got some laughs but the message stuck.

Conclusion

Environmental scanning is too important to effective planning to be avoided due to cost reasons. Community colleges, no less than corporations and governments, need to understand what is happening in the environment in which they exist. This article has attempted to show how scanning can be accomplished in a cost-efficient manner; indeed, it argues one person can do a valuable scan by identifying the right sources and by disseminating the results effectively. The article will be considered successful if its practical guidelines inspire new or creative scanning efforts at today's community colleges.

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